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Patent

Attorney's Docket No. 019519-267

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of ) BOX: AF  
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Nobuyuki KITA et al. ) Group Art Unit: 1752  
)  
Application No.: 09/662,548 ) Examiner: B. Gilliam  
)  
Filed: September 15, 2000 ) Confirmation No.: 1924  
)  
For: HEAT-SENSITIVE LITHOGRAPHIC )  
PRINTING PLATE PRECURSOR )

**SUBMISSION OF DECLARATION UNDER 37 C.F.R. §1.132 AND  
REQUEST FOR RECONSIDERATION**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Official Action dated November 27, 2002, reconsideration is respectfully requested in light of the following discussion and the attached Declaration Under 37 C.F.R. §1.132.

Before addressing the sole prior art rejection set forth in the Official Action, applicants believe that a discussion of the present invention and the advantages which may be obtained therefrom is in order. As defined in claim 1, one aspect of the present invention relates to a heat-sensitive lithographic printing plate precursor comprising a substrate having an ink-receptive surface or coated with an ink-receptive layer having provided thereon a hydrophilic layer which comprises: (1) a colloid of an oxide or a hydroxide of at least one element selected from the group consisting of beryllium, magnesium, aluminum, silicon, titanium, boron, germanium, tin, zirconium, iron, vanadium, antimony, and transition metals, (2) a hydrophilic resin, and (3) a light-to-heat

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conversion material, and a hydrophilic overcoat layer capable of being removed on a printing machine, in this order.

The hydrophilic overcoat layer is described in the specification, such as in the passage beginning at the bottom of page 32 wherein one of the advantages noted therein is the protect the hydrophilic layer from being stained by lipophilic substances. Upon imagewise exposure, the plate can be loaded onto a printer wherein the hydrophilic overcoat layer and the exposed portions of the hydrophilic layer can be removed, the removal of the exposed portions of the hydrophilic layer exposing the underlying ink-receptive surface or layer. An illustration of this sequence with explanatory comments is attached hereto.

The hydrophilic overcoat layer of the present invention can provide a significant improvement in press life without the occurrence of staining. This substantial advantage is illustrated in the attached Declaration Under 37 C.F.R. §1.132 which describes experiments wherein the plates of Examples 1 and 6 of the present application were prepared (the latter having a hydrophilic overcoat layer) and printing conducted until staining occurred. Compared to the plate which did not have the hydrophilic overcoat layer, the plate of Example 6 provided 5,000 more printed sheets until staining occurred (over a 40% increase). Thus, in the context of the plate structure defined in the claims of record, those of ordinary skill in the art will recognize that the present invention with the defined hydrophilic overcoat layer can provide a significant improvement in the art.

In the Official Action, the Examiner rejected the claims based on the combination of Vermeersch et al., U.S. Patent No. 6,210,857, and Gardner, Jr. et al., U.S. Patent No. 5,939,237. Vermeersch et al. describes a heat sensitive imaging element for providing a

lithographic printing plate which comprises a lithographic base with a hydrophobic oleophilic surface and a top layer comprising a compound capable of converting light into heat and a hydrophilic polymer that is cross-linked. As set forth in the passage beginning at column 5, line 4, the cross-linked hydrophilic layer can also preferably contain substances that increase the mechanical strength and porosity of the layer such as colloidal silica. Vermeersch et al. further discloses at column 5, lines 29-35 that between the top layer and the hydrophobic oleophilic surface of the support there can be at least one additional layer which comprises at least one compound selected from the group of hydrophilic binders, silica and polymer latices.

The Examiner has acknowledged that Vermeersch et al. does not teach the defined hydrophilic overcoat layer that is capable of being removed on a printing machine that is on top of the hydrophilic layer comprising the specified colloid, hydrophilic resin and the light-to-heat conversion material. Quite to the contrary, by disclosing a "top layer" comprising the compound capable of converting light into heat and the cross-linked hydrophilic polymer, Vermeersch et al. would tend to suggest that a further layer is not in order.

The Examiner has attempted to overcome the deficiencies of Vermeersch et al. by relying on Gardner, Jr. et al.. This latter patent describes a "no-process printing plate" which includes a hydrophilic protective layer which can be removed after exposure by the action of the fountain solution, ink and/or printing press when the imaged plate is located on the printing press (column 3, lines 34-37). In the embodiment described in the passage beginning at column 4, line 36, a hydrophilic photohardening layer is overcoated with a hydrophobic photohardening layer. After imaging and placement on the printing press, the

hydrophobic layer is removed in the unexposed areas resulting in the exposed areas being more hydrophobic than the unexposed areas.

It is evident that the construction of the plate in Gardner, Jr. et al. is substantially different from that of the present invention wherein the exposed portions of the defined hydrophilic layer are removed or, for that matter, of Vermeersch et al. Given the absence of any indication in Vermeersch et al. of the need for a protective layer (and the reference to the defined "top layer") and the differences in structure, there is no proper basis for making the proposed combination. Furthermore, even if a proper basis existed for suggesting the combination, the hypothetical combination would still not lead to an understanding that the press life can be substantially improved as illustrated in the experiments provided in the attached Declaration. Thus, based on the foregoing discussion and the evidence of record, applicants respectfully submit that the presently claimed invention is patentable over the cited prior art and accordingly request reconsideration and allowance of the present application.

Should the Examiner wish to discuss any aspect of the present application, she is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: Robert G. Mukai  
Robert G. Mukai  
Registration No. 28,531

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

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